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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,092	05/05/2005	Eugene Howe	34155-pa	2030

7590 05/05/2006  
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EXAMINER

LEE, JINHEE J

ART UNIT	PAPER NUMBER
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2831

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

51

<b>Office Action Summary</b>	<b>Application No.</b> 10/507,092	<b>Applicant(s)</b> HOWE, EUGENE	
	<b>Examiner</b> Jinhee J. Lee	<b>Art Unit</b> 2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 28-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 and 38-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) *  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 28-37 (renumbered) withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim.
2. Applicant's election of Group I in the reply filed on 2/15/06 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The requirement is still deemed proper and is therefore made FINAL.

### ***Specification***

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Abstract needs to be on a separate paper.

***Claim Objections***

4. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claim 36 has been renumbered 37,  
misnumbered claim 37 has been renumbered 38,  
misnumbered claim 38 has been renumbered 39,  
misnumbered claim 39 has been renumbered 40.

As renumbered, dependencies are presumed to be as follows:

Claim 39 depends from claim 38, and claim 40 depends from claim 39.

5. Claims 1 and 23 are objected to because of the following informalities:

Claim 1 line 2, the phrase "which has" has an error. Examiner suggests "comprising" instead to avoid confusion.

Claim 23 line 2, the phrase "minimise" has a spelling error. Examiner suggests "minimize" instead to correct the error.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-9xs are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the same" in line 2. This is confusing.

Claim 5 recites the limitation "a first conductor set and a second conductor set" in lines 2-3. This is confusing. Is this the same or different as the "conductor sets" that were set forth in the preceding claims.

Claim 12 recites the limitation "no lay" in line 2. This is confusing. Claim 11 states that "each set having at least two conductors twisted or wound with respect to each other". How can the conductors be twisted and have no lay? Clarify.

Claim 19 recites the limitation "the conductor sets are wound around each other and/or the elongate member" in line 2. This is confusing. Claim 11 states that "said conductor sets are positioned to run substantially straight along the cable". How can the conductor sets run substantially straight and be wounded. Clarify.

Claim 22 recites the limitation "the degree of difference" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 26 recites the limitation "the conductor sets are wound around the elongate member" in line 1-2. This is confusing. Claim 11 states that "said conductor sets are positioned to run substantially straight along the cable". How can the conductor sets run substantially straight and be wounded. Clarify.

Claim 27 recites the limitation "carries services therealong" in line 2. This is confusing. Clarify.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claim 1-3, 11-21, 23-27 are rejected under 35 U.S.C. 102(b) as anticipated by Tash et al. ( WO2001054139 ).

Re claim 1 (as best understood), Tash et al. discloses a cable which has at least two conductor sets (twisted pair cables, 23-24 and 26-27 for example) provided to run along the same, each of said conductor set including at least two conductors twisted or wound around each other and wherein said at least two conductor sets are kept physically spaced apart by a distance of at least 1 mm as they run along said cable (see figure 6 and page 9 lines 11-14 for example).

Re claim 2, Tash et al. discloses a cable wherein the cable includes an elongate member (Channel filler 20 for example) which acts to space the conductor sets the required distance apart (see figure 5 for example) .

Re claim 3, Tash et al. discloses a cable wherein said at least two conductor sets are kept spaced apart by a distance of at least 2 mm or greater distance (see figure and page 9 lines 11-14 for example).

Re claim 11, Tash et al. discloses a data cable comprising a series of conductors selectively grouped together into at least two conductor sets, each set having at least two conductors twisted or wound with respect to each other, each set spaced by an

elongate member (20 for example) and wherein said conductor sets are positioned to run substantially straight along the cable (see figure 5 for example) .

Re claim 12 (as best understood), Tash et al. discloses a data cable wherein the said at least two conductor sets are positioned to run along the cable with no lay (see figure 5 for example) .

Re claim 13, Tash et al. discloses a data cable wherein at least one conductor set is mounted within an elongate member to pass therealong and one or more conductor sets are positioned on the external surface of the elongate member (see figure 5 for example) .

Re claim 14, Tash et al. discloses a data cable wherein the cable comprises four sets of conductors, each set comprising at least two conductors twisted or wound and each of the sets spaced apart by at least 1 mm (see figure 6 and page 9 lines 11-14 for example) .

Re claim 15, Tash et al. discloses a data cable wherein the cable cross section is substantially circular and the conductor sets are spaced apart substantially 90 degrees between adjacent sets (see figure 6 for example) .

Re claim 16, Tash et al. discloses a data cable wherein each of the conductors is insulated from the others by insulating material and the cable, includes an outer housing of insulating material (see figures 5 and 6 for example) .

Re claim 17, Tash et al. discloses a data cable said cable including an elongate member, said member locating thereon or therein, a plurality of conductor sets, said conductor sets provided at spaced locations to pass along and/or within the elongate

Art Unit: 2831

member with the spacing being 1 mm or greater between adjacent conductor sets (see figures 5, 6 and page 9 lines 11-14 for example) .

Re claim 18, Tash et al. discloses a data cable wherein the elongate member is in the form of a tube and the conductor sets lie on any or any combination of the inside or outer surfaces of the tube wall and/or within the wall itself (see figures 5 and 6).

Re claim 19, Tash et al. discloses a data cable wherein the conductor sets are wound around each other and/or the elongate member (see figures 5 and 6).

Re claim 20, Tash et al. discloses a data cable wherein the longitudinal axes of each of the conductor sets run substantially parallel to the longitudinal axis of the elongate member (see figures 5 and 6 for example) .

Re claim 21, Tash et al. discloses a data cable wherein the degree of twist or winding of the conductors in each conductor set is varied with respect to that of the other sets of conductors (see page 8 lines 16-end to page 9 lines 1-3 for example) .

Re claim 23, Tash et al. discloses a data cable wherein each of the sets of twisted conductors are provided at the same density (see figures 5 and 6 for example) to minimize any propagation delay in the data transferred along the cable.

Re claim 24, Tash et al. discloses a data cable wherein at least one conductor set passes along the elongate member passage substantially in parallel with the longitudinal axis of the cable (see figure 5 for example) .

Re claim 25, Tash et al. discloses a data cable wherein each of the conductor sets runs in a straight linear path in parallel with the longitudinal axis of the cable (see figure 5 for example) .



Re claim 26 (as best understood), Tash et al. discloses a data cable wherein one or more of the conductor sets is wound around the elongate member in a substantially helical path (see figure 5 for example) .

Re claim 27 (as best understood), Tash et al. discloses a data cable wherein a passage in the elongate member carries services therealong (see figure 5 for example)

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boucino et al.

Re claim 1 (as best understood), Boucino et al. discloses a cable which has at least two conductor sets (twisted pair cables, 16, 18 for example) provided to run along the same, each of said conductor set including at least two conductors twisted or wound around each other. Boucino et al. does not explicitly disclose wherein said at least two conductor sets are kept physically spaced apart by a distance of at least 1 mm as they run along said cable. It would have been an obvious matter of design choice to use the spacer (14) with thickness of at least 1 mm to physically keep the at least two conductor sets apart by at least 1 mm, since such a modification would have involved a mere change in the dimensions or proportion of a component. A change in dimensions or

Art Unit: 2831

proportion is generally recognized as being within the level of ordinary skill in the art. *In Gardner v. TEC Systems, Inc.*, 725 F .2d 1338, 220 USPQ 777 (Fed. Cir. 1984).

Re claim 2, note that Boucino et al. discloses a cable wherein the cable includes an elongate member (spacer 14 for example) which acts to space the conductor sets the required distance apart (see figure 1).

Re claim 3, Boucino et al. substantially discloses a cable as set forth in claim 1 above. Boucino et al. does not explicitly disclose wherein said at least two conductor sets are kept spaced apart by a distance of at least 2 mm or greater distance. It would have been an obvious matter of design choice to use the spacer (14) with thickness of at least 2 mm to physically keep the at least two conductor sets apart by at least 2 mm, since such a modification would have involved a mere change in the dimensions or proportion of a component. A change in dimensions or proportion is generally recognized as being within the level of ordinary skill in the art. *In Gardner v. TEC Systems, Inc.*, 725 F .2d 1338, 220 USPQ 777 (Fed. Cir. 1984).

Re claim 4, note that Boucino et al. discloses a cable wherein at least one of the conductor sets is wound or twisted around the outside of the elongate member (see figure 1 for example).

Re claim 5, note that the device of Boucino et al. includes wherein an elongate member having a passage (with 30 for example, and see abstract) is included, said passage housing a first conductor set and a second conductor set is positioned to run along the outside of said member.

Re claim 6, note that Boucino et al. discloses a cable wherein the second conductor sets is wound around the elongate member (see column 4 lines 15-18 for example).

Re claim 7, Boucino et al. substantially discloses a cable as set forth in claim 6 above wherein the degree of twist between the respective conductor sets is different (see column 3 lines 34-36 for example) . Boucino et al. does not explicitly disclose wherein the second conductor set is of higher resistivity than the first conductor set. It would have been an obvious matter of design choice to have the second conductor set of higher resistivity than the first conductor set in order to have different resistivity and crosstalk, since such a modification would have involved a mere change in the dimensions or proportion of a component. A change in dimensions or proportion is generally recognized as being within the level of ordinary skill in the art. *In Gardner v. TEC Systems, Inc.*, 725 F .2d 1338, 220 USPQ 777 (Fed. Cir. 1984).

Re claim 8, note that the device of Boucino et al. teaches of wherein the passage is provided with location points (wall 30 for example) to locate the first conductor set therein.

Re claim 9, note that the device of Boucino et al. teaches of wherein the degree of twist or winding of conductors in at least one of the set of conductors differs from that of the conductors in the other conductor sets in the cable (see column 3 lines 33-36 for example) .

Re claim 10, note that the device of Boucino et al. teaches of wherein the variation between the degree of twist or winding of the conductors in each of the

Art Unit: 2831

conductor sets differs with respect to each of the other conductor sets and the degree of variation is defined with respect to the relative spacing between the adjacent conductor sets (see column 4 lines 22-26 for example) .

12. Claims 22, 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tash et al.

Re claim 22, Tash et al. substantially discloses a data cable as set forth except wherein the degree of difference is increased as the spacing between the respective conductor sets is reduced. It would have been an obvious matter of design choice to use the degree of difference that is increased as the spacing between the respective conductor sets is reduced in order to provide optimum crosstalk, since such a modification would have involved a mere change in the dimensions or proportion of a component. A change in dimensions or proportion is generally recognized as being within the level of ordinary skill in the art. *In Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984).

Re claim 38, Tash et al. discloses a method for forming cable which includes a series of conductor sets, each of said sets including at least two conductors which are twisted/ wound about one another to form the set (see figures 5 and 6 and page 8 lines 16-end and page 9 lines 1-3 for example) . Tash et al. does not explicitly disclose the degree of twist/winding ratio of each of the sets is compared with the twist ratios for each of the other sets and also the required spacing between the sets as they run along the cable and on the basis of this comparison the degree of twist/winding ratio of the conductors in each conductor set are varied with respect to the other conductor sets, if

Art Unit: 2831

required to improve the performance of the cable. It would have been an obvious matter of design choice to use the comparison of twist ratio with the required spacing to find optimum configuration and sizing, since such a modification would have involved a mere change in the dimensions or proportion of a component. A change in dimensions or proportion is generally recognized as being within the level of ordinary skill in the art. *In Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984).

Re claim 39, note that Tash et al. discloses a method wherein the difference between the degree of twist/winding ratios increases progressively through the adjacent spaced conductor sets (see figures 5 and 6 and page 8 lines 16-end and page 9 lines 1-3 for example).

Re claim 40, Tash et al. substantially discloses a method as set forth above except wherein the level of variation in the degree of twist/winding increases as the required spacing between the conductor sets reduces. It would have been an obvious matter of design choice to use the level of variation in the degree of twist/winding increases as the required spacing between the conductor sets reduces in order to provide optimum crosstalk and sizing, since such a modification would have involved a mere change in the dimensions or proportion of a component. A change in dimensions or proportion is generally recognized as being within the level of ordinary skill in the art. *In Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984).

Art Unit: 2831

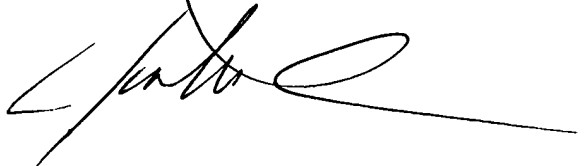
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jinhee J Lee whose telephone number is 571-272-1977. The examiner can normally be reached on M, T, Th and F at 6:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A Reichard can be reached on 571-272-2800 ext. 31. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jinhee J Lee  
Primary Examiner  
Art Unit 2831

A handwritten signature in black ink, appearing to be 'Jinhee J Lee', written over a horizontal line.

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